PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 5189-PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US05/02609	International filing date *(day/month/year)* 27 January 2005 (27.01.2005)	Priority date *(day/month/year)* 27 January 2004 (27.01.2004)
International Patent Classification (IPC) or national classification and IPC IPC: **A61K 38/00**(2006.01),**38/16**(2006.01) USPC: 530/320,324		
Applicant BAYER PHARMACEUTICALS CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☐ *(sent to the applicant and to the International Bureau)* a total of ___ sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) _____ , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the report
   - ☐ Box No. II Priority
   - ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☐ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☒ Box No. VII Certain defects in the international application
   - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 29 July 2005 (29.07.2005)	Date of completion of this report 01 August 2006 (01.08.2006)
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Gregory S. Emch *J. Roberts for* Telephone No. (571) 272-1600

Form PCT/IPEA/409 (cover sheet)(April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/02609

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☒ the description:
pages 1-38 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

☒ the claims:
pages 39-43 as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

☒ the drawings:
pages 1-17 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

☒ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

** If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/02609

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 6-8

because:

☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 6-8 are so unclear that no meaningful opinion could be formed *(specify)*:

There is a lack of antecedent basis to the claims; they refer to "the polyethylene glycol".

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*:

☐ no international search report has been established for said claims Nos. _____

☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

- ☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
- ☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
- ☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13*ter*.1(a) or (b) and 13*ter*.2.

☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions, and such tables were not available to the International Preliminary Examining Authority in a form and manner acceptable to it.

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/02609

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5, 9-11, 42, 44-46, and 48	YES
	Claims	1-4,12-41,43,47 and 49-53	NO
Inventive Step (IS)	Claims	5, 9-11, 42, 44-46, and 48	YES
	Claims	1-4, 12-41, 43, 47, and 49-53	NO
Industrial Applicability (IA)	Claims	1-5 and 9-53	YES
	Claims	NONE	NO

2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 27-29 are duplicates of claims 22-24.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

V. 2 Citations and Explamations:

Claims 1, 2, 12-16, and 37 lack novelty under PCT Article 33(2) as being anticipated by EP0536741A2 to Bolin et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof.

The claims lack novelty because Bolin et al. teaches VIP related polypeptides that are 82.4% identical to Applicant's SEQ ID NO: 5 (p.128, SEQ ID NO: 68) and 78% identical Applicant's SEQ ID NO: 116 (p.128, SEQ ID NO: 68), thus anticipating claims 1 and 2. Bolin et al. teaches pharmaceutical compositions comprising the VIP polypeptides (p. 16, lines 22-23; p.29, lines 39-40), thus anticipating claims 12-16. Bolin et al. also teaches that the polypeptides can be used to treat asthma (p.29, line 41), thus anticipating claim 37.

Claims 1-4, 12-18, 20-24, 27-29, 32, 33, 37, 39, 43, 47, 49, and 51-53 lack novelty under PCT Article 33(2) as being anticipated by WO 01/23420 A2 to Pan et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof as well as antibodies that bind to said polypeptides, pharmaceutical compositions comprising said polypeptides, and methods reciting said polypeptides.

The claims lack novelty because Pan et al. teaches polypeptides that are 93.6% identical to Applicant's SEQ ID NO: 1 (p.38, claim 1 "Insulin secretagogue peptide R3P66") 93.7% identical to Applicant's SEQ ID NO: 2 (p.38, claim 1, "Insulin secretagogue peptide R3P71"), 89.2% identical to Applicant's SEQ ID NO: 4 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), 90.6% identical to Applicant's SEQ ID NO: 5 (p.38, claim 1 "Insulin secretagogue peptide R3P29"), 88.6% identical to Applicant's SEQ ID NO: 112 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), 88.6% identical to Applicant's SEQ ID NO: 113 (p.38, claim 1,

Supplemental Box

"Insulin secretagogue peptide R3P71"), 84.3% identical to Applicant's SEQ ID NO: 115 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), and 93.6% identical to Applicant's SEQ ID NO: 116 (example 7, p.23, "Insulin secretagogue peptide R3P21"), thus anticipating claims 1 and 2. Pan et al. teaches polyclonal antibodies that selectively bind the polypeptides (p.5, line 1 and p.33, line 3), thus anticipating claims 3 and 4. Pan also teaches that the antibodies can be used to detect the polypeptides by ELISA methods (p.34, lines 29-34), thus anticipating claim 9. Pan et al. teaches pharmaceutical compositions comprising the polypeptides (p. 17, lines 11-21), thus anticipating claims 12-16, and 50-53. Pan et al. teaches that the pharmaceutical compositions can be present as a kit and are administered in an amount to effectively treat specific conditions, such as type 2 diabetes, asthma, male reproductive problems, cardiovascular problems, or impaired glucose tolerance (p.16, line 35 - p.17, line 21), thus anticipating claims 17, 18, 20-24, 27-29, 32, 33, 37, 39, 43, and 47. Pan et al. teaches that the polypeptides stimulate insulin secretion (p.16, line 35), thus anticipating claim 49.

Claims 1, 2, 12-28, 30-36, 38-41, and 49-53 lack novelty under PCT Article 33(2) as being anticipated by WO 03/068805 A2 to Wang et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof as well as antibodies that bind to said polypeptides, pharmaceutical compositions comprising said polypeptides, and methods reciting said polypeptides.

The claims lack novelty because Wang et al. teaches polypeptides that are 93.6% identical to Applicant's SEQ ID NO: 1 (p.2, claim 3 "pituitary adenylate cyclase-activating polypeptide 66, PACAP 66"), 89.2% identical to Applicant's SEQ ID NO: 4 (p.2, claim 3, PACAP 66), 88.6% identical to Applicant's SEQ ID NO: 112 (p.2, claim 3, PACAP 66), and 84.3% identical to Applicant's SEQ ID NO: 115 (p.2, claim 3, PACAP 66), thus anticipating claims 1 and 2. Wang et al. teaches pharmaceutical compositions comprising the polypeptides (entire document, especially abstract and p.11, lines 19-25), thus anticipating claims 12-16 and 50-53. Wang et al. teaches that the pharmaceutical compositions are administered in an amount to effectively treat specific conditions, such as type 2 diabetes, impaired glucose tolerance, impaired fasting glucose, and syndrome X, (p.12, lines 10-18), thus anticipating claims 17-25, 27, and 28. Wang et al. teaches that the pharmaceutical compositions can be used to treat secondary causes of diabetes, including glucocorticoid excess, growth hormone excess, pheochromocytoma, and drug induced diabetes (p.12, lines 19-25), thus anticipating claims 33-35. The formulations of the invention can be used in conjunction with PPAR agonists, sulfonylurea drugs, non-sulfonylurea secretagogues, á-glucosidase inhibitors, insulin sensitizers, insulin secretagogues, hepatic glucose output lowering compounds, insulin, and anti-obesity agents (p.13, lines 1-5), thus anticipating claims 26, 36, and 38. Wang et al. teaches that the polypeptides stimulate insulin secretion (p.16, line 35), thus anticipating claim 49. Wang et al. teaches that the polypeptides can be used to treat hypertension (p.11, line 25), thus anticipating claims 39 and 40. The composition can be administered in a single dose (p.12, lines 5-6), thus anticipating claim 32. The formulations can be used to treat lipid disorders and can be administered with HMG-CoA reductase inhibitors, nicotinic acid, bile acid sequestrants, and fibric acid derivatives, â-blockers, and ACE inhibitors (p.14, lines 1-6), thus anticipating claims 30, 31, and 41.

Claims 5, 9-11, 42, 44-46 and 48 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the claimed invention.

Claims 1-5 and 9-53 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JEFFREY M. GREENMAN
BAYER PHARMACEUTICALS CORPORATION
400 MORGAN LANE
WEST HAVEN, CT 06516

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing (*day/month/year*)	09 MAR 2006
Applicant's or agent's file reference 5189-PCT	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date (*day/month/year*)	Priority date (*day/month/year*)
PCT/US05/02609	27 January 2005 (27.01.2005)	27 January 2004 (27.01.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC(8): A61K 38/00, 38/16 and US Cl.: 530/320, 324

Applicant

BAYER PHARMACEUTICALS CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☒ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☒ Box No. VII — Certain defects in the international application
- ☐ Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(*b*) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	20 December 2005 (20.12.2005)	Gregory S. Emch Telephone No. (571) 272-1600

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/02609

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/02609

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 6-8

because:

☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require an international search *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 6-8 are so unclear that no meaningful opinion could be formed *(specify)*:

There is a lack of antecedent basis to the claims; they refer to "the polyethylene glycol".

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*:

☐ no international search report has been established for said claims Nos. _____

☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

- ☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
- ☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
- ☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13*ter*.1(a) or (b).

☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-bis of the Administrative Instructions, and such tables were not available to the International Searching Authority in a form and manner acceptable to it.

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/02609

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 5, 9-11, 42, 44-46, and 48	YES
	Claims 1-4, 6-8, 12-41, 43, 47, and 49-53	NO
Inventive step (IS)	Claims 5, 9-11, 42, 44-46, and 48	YES
	Claims 1-4, 6-8, 12-41, 43, 47, and 49-53	NO
Industrial applicability (IA)	Claims 1-5 and 9-53	YES
	Claims NONE	NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/02609

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 27-29 are duplicates of claims 22-24.

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1, 2, 12-16, and 37 lack novelty under PCT Article 33(2) as being anticipated by EP0536741A2 to Bolin et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof.

The claims lack novelty because Bolin et al. teaches VIP related polypeptides that are 82.4% identical to Applicant's SEQ ID NO: 5 (p.128, SEQ ID NO: 68) and 78% identical Applicant's SEQ ID NO: 116 (p.128, SEQ ID NO: 68), thus anticipating claims 1 and 2. Bolin et al. teaches pharmaceutical compositions comprising the VIP polypeptides (p. 16, lines 22-23; p.29, lines 39-40), thus anticipating claims 12-16. Bolin et al. also teaches that the polypeptides can be used to treat asthma (p.29, line 41), thus anticipating claim 37.

Claims 1-4, 9, 12-18, 20-24, 27-29, 32, 33, 37, 39, 43, 47, 49, and 51-53 lack novelty under PCT Article 33(2) as being anticipated by WO 01/23420 A2 to Pan et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof as well as antibodies that bind to said polypeptides, pharmaceutical compositions comprising said polypeptides, and methods reciting said polypeptides.

The claims lack novelty because Pan et al. teaches polypeptides that are 93.6% identical to Applicant's SEQ ID NO: 1 (p.38, claim 1 "Insulin secretagogue peptide R3P66") 93.7% identical to Applicant's SEQ ID NO: 2 (p.38, claim 1, "Insulin secretagogue peptide R3P71"), 89.2% identical to Applicant's SEQ ID NO: 4 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), 90.6% identical to Applicant's SEQ ID NO: 5 (p.38, claim 1 "Insulin secretagogue peptide R3P29"), 88.6% identical to Applicant's SEQ ID NO: 112 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), 88.6% identical to Applicant's SEQ ID NO: 113 (p.38, claim 1, "Insulin secretagogue peptide R3P71"), 84.3% identical to Applicant's SEQ ID NO: 115 (p.38, claim 1, "Insulin secretagogue peptide R3P66"), and 93.6% identical to Applicant's SEQ ID NO: 116 (example 7, p.23, "Insulin secretagogue peptide R3P21"), thus anticipating claims 1 and 2. Pan et al. teaches polyclonal antibodies that selectively bind the polypeptides (p.5, line 1 and p.33, line 3), thus anticipating claims 3 and 4. Pan also teaches that the antibodies can be used to detect the polypeptides by ELISA methods (p.34, lines 29-34), thus anticipating claim 9. Pan et al. teaches pharmaceutical compositions comprising the polypeptides (p. 17, lines 11-21), thus anticipating claims 12-16, and 50-53. Pan et al. teaches that the pharmaceutical compositions can be present as a kit and are administered in an amount to effectively treat specific conditions, such as type 2 diabetes, asthma, male reproductive problems, cardiovascular problems, or impaired glucose tolerance (p.16, line 35 - p.17, line 21), thus anticipating claims 17, 18, 20-24, 27-29, 32, 33, 37, 39, 43, and 47. Pan et al. teaches that the polypeptides stimulate insulin secretion (p.16, line 35), thus anticipating claim 49.

Claims 1, 2, 12-28, 30-36, 38-41, and 49-53 lack novelty under PCT Article 33(2) as being anticipated by WO 03/068805 A2 to Wang et al.

The claims are drawn to a polypeptide selected from the group consisting of SEQ ID NOs: 1-148, and functionally equivalent fragments, derivatives, and variants thereof as well as antibodies that bind to said polypeptides, pharmaceutical compositions comprising said polypeptides, and methods reciting said polypeptides.

The claims lack novelty because Wang et al. teaches polypeptides that are 93.6% identical to Applicant's SEQ ID NO: 1 (p.2,

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

claim 3 "pituitary adenylate cyclase-activating polypeptide 66, PACAP 66"), 89.2% identical to Applicant's SEQ ID NO: 4 (p.2, claim 3, PACAP 66), 88.6% identical to Applicant's SEQ ID NO: 112 (p.2, claim 3, PACAP 66), and 84.3% identical to Applicant's SEQ ID NO: 115 (p.2, claim 3, PACAP 66), thus anticipating claims 1 and 2. Wang et al. teaches pharmaceutical compositions comprising the polypeptides (entire document, especially abstract and p.11, lines 19-25), thus anticipating claims 12-16 and 50-53. Wang et al. teaches that the pharmaceutical compositions are administered in an amount to effectively treat specific conditions, such as type 2 diabetes, impaired glucose tolerance, impaired fasting glucose, and syndrome X, (p.12, lines 10-18), thus anticipating claims 17-25, 27, and 28. Wang et al. teaches that the pharmaceutical compositions can be used to treat secondary causes of diabetes, including glucocorticoid excess, growth hormone excess, pheochromocytoma, and drug induced diabetes (p.12, lines 19-25), thus anticipating claims 33-35. The formulations of the invention can be used in conjunction with PPAR agonists, sulfonylurea drugs, non- sulfonylurea secretagogues, á-glucosidase inhibitors, insulin sensitizers, insulin secretagogues, hepatic glucose output lowering compounds, insulin, and anti-obesity agents (p.13, lines 1-5), thus anticipating claims 26, 36, and 38. Wang et al. teaches that the polypeptides stimulate insulin secretion (p.16, line 35), thus anticipating claim 49. Wang et al. teaches that the polypeptides can be used to treat hypertension (p.11, line 25), thus anticipating claims 39 and 40. The composition can be administered in a single dose (p.12, lines 5-6), thus anticipating claim 32. The formulations can be used to treat lipid disorders and can be administered with HMG-CoA reductase inhibitors, nicotinic acid, bile acid sequestrants, and fibric acid derivatives, â-blockers, and ACE inhibitors (p.14, lines 1-6), thus anticipating claims 30, 31, and 41.